

Student Name:

Student id:

Sect:

Serial#:

University of Bahrain
College of Information Technology
Department of Computer Science

ITCS241: Assembly Programming

Assembly Fundamentals

Quiz #2

Study carefully the following definitions and answer all questions below.

ME SWORD 3AE4H, 0C3D6H, -9, 397EH, 2659H, 7 dup(4), 703AH, 98DFH, -8
YOU SBYTE 100, -7
WE WORD 2C9AH

- 1) The error with the statement `mov ME[6], ME[2]` is 2 MEM OPERANDS
- 2) Give ONE instruction that replaces the -9 by 7E4FH MOV ME[4], 7E4FH
- 3) The instruction: `mov bx, ME+6` stores the value 39 7E H in BX register.
- 4) The instruction: `mov ah, YOU-5` stores the value 3A H in BX register.
- 5) The 2 types of assembly statements are: Instructions and Directives
- 6) Assembly statements used to provide information are called Directives
- 7) The range of values that fit in `sdword` location is $-2^{31} \text{ to } 2^{31}-1$
- 8) The directive that defines an array UUU consisting of 256 elements initialized with "&" is
UUU byte 256 DUP('&')
- 9) The number of bytes occupied by "`H dword 20, 2 dup(1, 2, 4, 2 dup(33, 42, 51), 99)`" is $21 \times 4 = 84$
- 10) Draw the memory map for the statements: YOU and WE.

Address (Name)	Contents (HEX)
YOU	64
	F9
WE	9A
	2C

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- 1) The 2 types of statement labels are: code label and data label.
- 2) The directive that defines a constant **an** whose value is "evrika" is an equ 'evrika'
- 3) The directive that defines an array **FFF** to store 20 student **ids** is
FFF word 20 dup(8)
- 4) The number of bytes occupied by "F word 8, 3 dup(1, 2, 4, 4 dup(7, 55), 9)" is 74 bytes

Given the array: **FF** **SWORD** **500** **DUP** (**9C4EH**, **3F0AH**), answer the following questions:

- 5) Give ONE statement that causes the assembler to store the number of items in the array **FF** in a constant named **FF_L** FF_L equ length of FF
- 6) The a statement that stores in **CX** the size of one item in array **FF** is mov cx, type FF
- 7) Write a sequence of instructions to increment every byte in array **FF**

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```
mov ecx, 1000
mov si, offset FF
L:
inc byte ptr [si]
inc si
loop L
```

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- 11) The 2 types of assembly statements are: Instructions and Directives.
- 12) The directive that defines a constant new whose value is 365 is new equ 365
- 13) The directive that defines an array RRR consisting of 33 strings initialized with "ITCS241" is
RRR byte 33 dup("ITCS241")
- 14) The number of bytes occupied by "H dword 8, 3 dup(1, 2, 4, 2 dup(7, 55), 9)" is 2524 = 100

Given the array: GG SWORD 1024 DUP (3A4BH, 9F2CH), answer the following questions:

- 15) Give ONE statement that causes the assembler to store the number of bytes occupied by the array GG in a constant named GG_S EQU \$ - GG
- 16) The statement that stores in AH the number of items in array GG is MOV AH, LENGTHOF GG
- 17) Write a sequence of instructions to subtract 55 from every byte in array GG

MOV CX, SIZEOF GG MOV ECX, Length
MOV SI, OFFSET GG MOV EBX, offset
NEXT: SUB byte PTR [ESI], 55 sub byte ptr [esi], 55
INC SI add esi, 1
LOOP NEXT loop NO